Water Conditions Summary

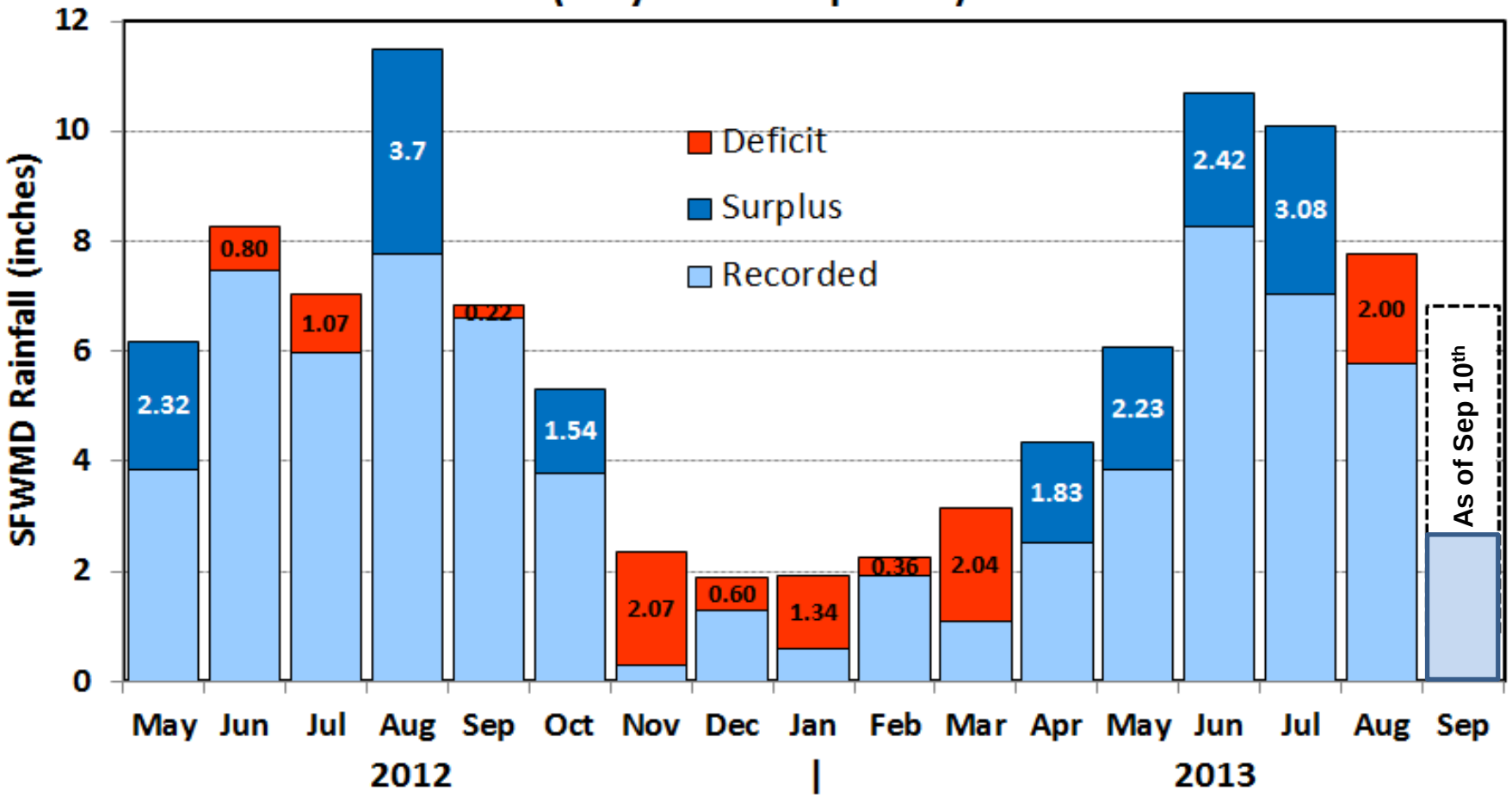
South Florida Water Management District Governing Board Meeting

September 12, 2013

Tommy B. Strowd, P.E., Assistant Executive Director
Operations, Maintenance & Construction
South Florida Water Management District

SFWMD Rainfall Distribution Comparison

(May 2012 - Sep 2013)



2012 WET SEASON:

- Started early with wet May, followed by dry June and July . TS Isaac brought August rainfall high above average.
- Ended up above average.

2012-13 DRY SEASON:

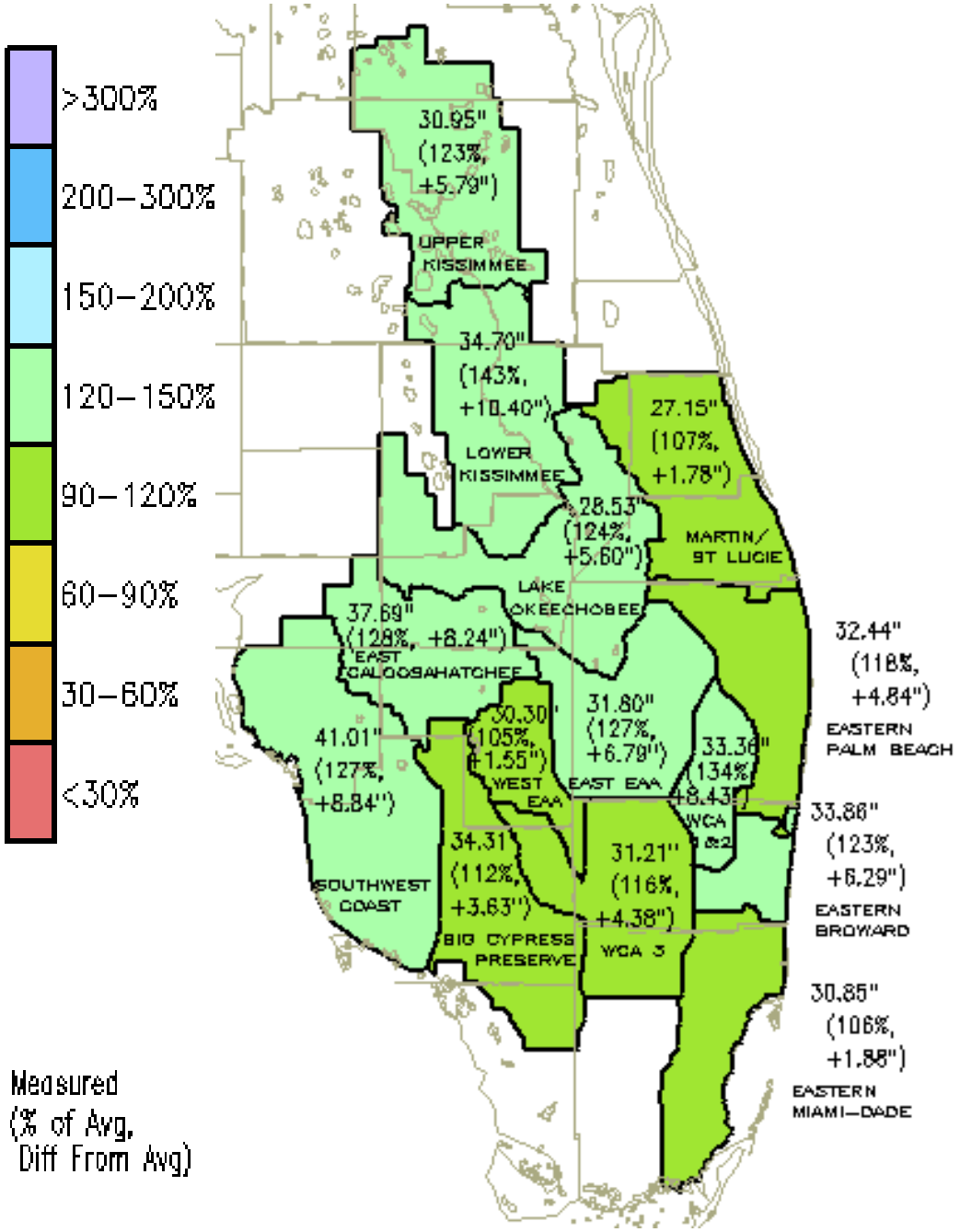
- Driest November since 1932
- Below average despite April/May being above

2013 WET SEASON:

- May 18th Start
- T.S. Andrea produced 3.1 inches District wide
- Above average so far

SFWMD
Wet Season Rainfall

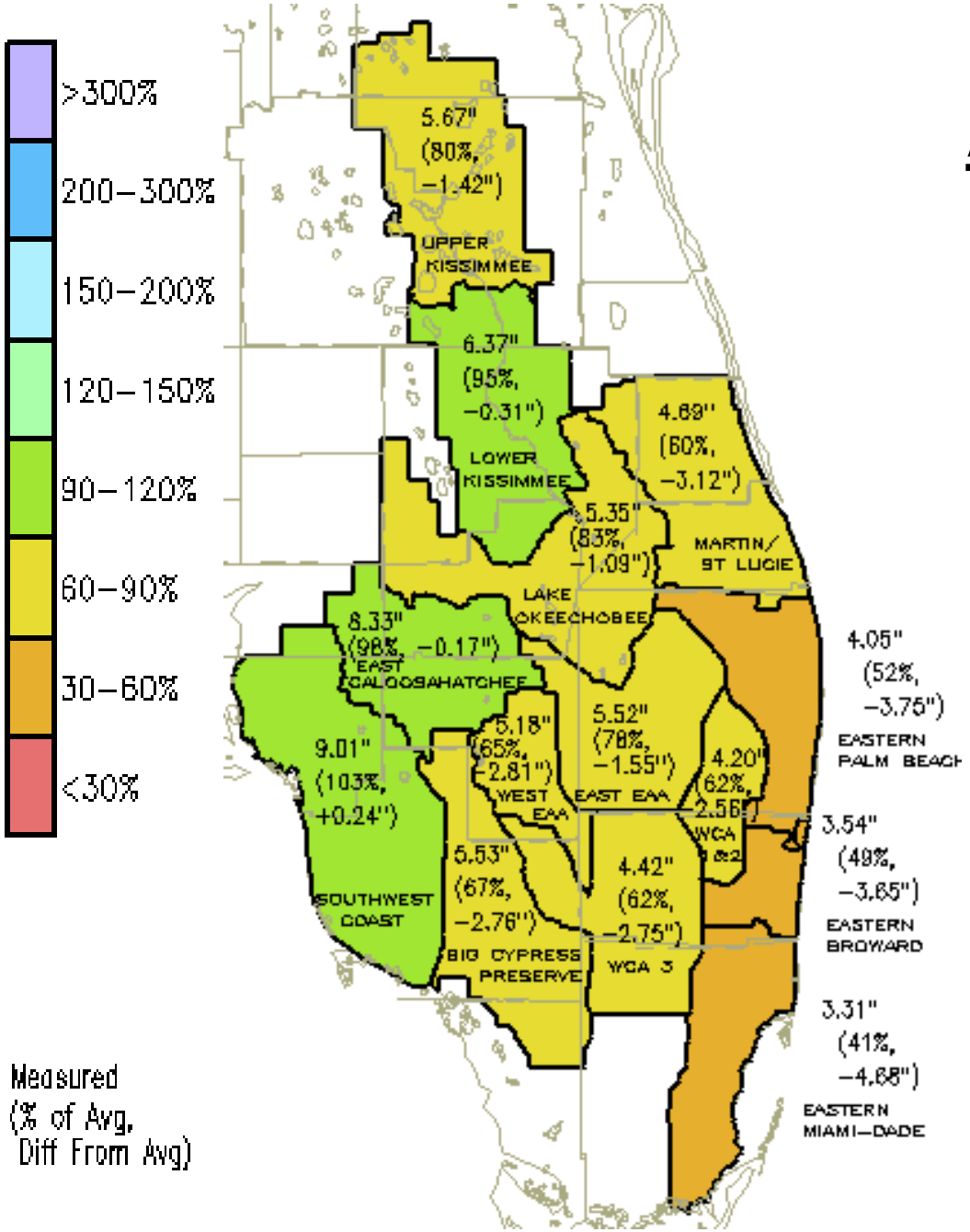
May 18 2013 – Sep 10 2013



DISTRICT-WIDE: 33.03” (122% of Avg, or +6.05”)

- Wet Season Started ~May 18th
- All basins > 100% average
- April-July was very wet
- April-August period was 2nd wettest in 81-yr record (1947 was wettest by 0.37”)

SFWMD
August 2013 Rainfall
(Aug 2 to 31, 2013)



DISTRICT-WIDE: 5.78” (77% of Avg, or -1.75”)

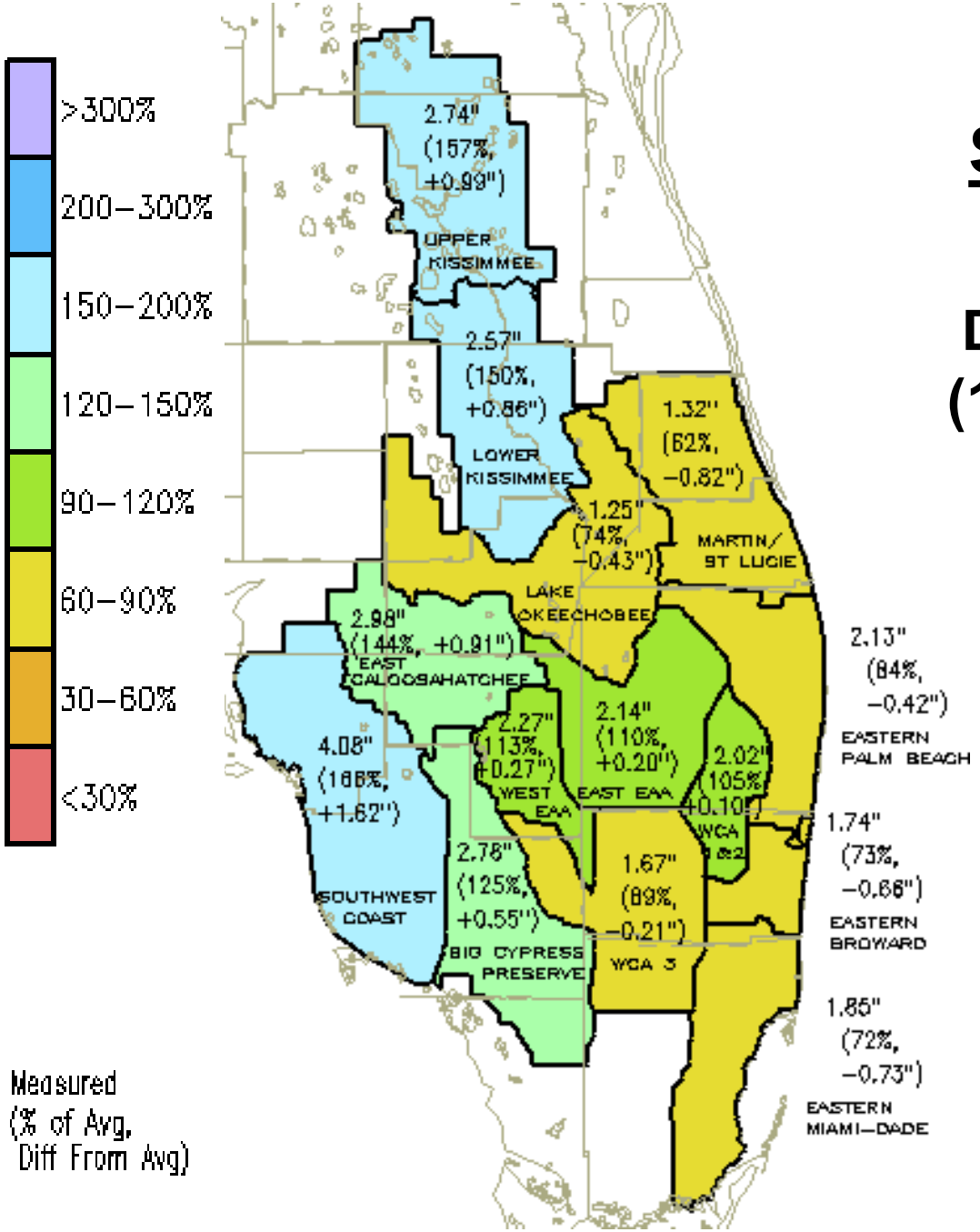
- August 2013 rainfall was below average
- Driest August since 2007
- Only the South West Coast was above average (103%)
- All remaining basins were below average

SFWMD

Sept. 2013 Rainfall

(through 7am Sep 10th)

DISTRICT-WIDE: 2.36”
(115% of Avg, or +0.31”)



- **So far in September District-wide rainfall has been above-average**
- **Above-average north of Lake O & southwest**
- **Below-average for Lake O, East coast & WCA-3**

North Ft. Myers Flooding

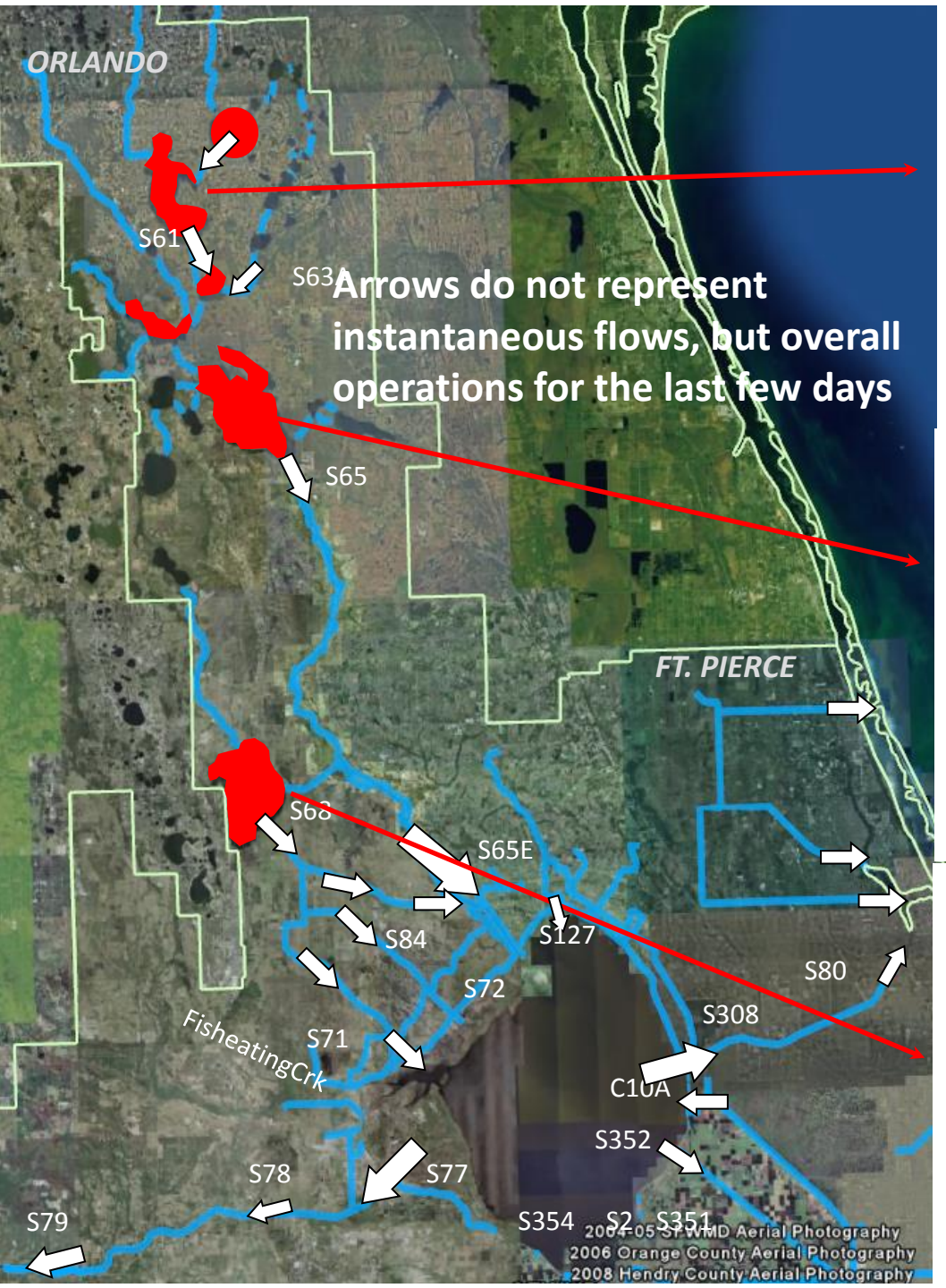
- Over the Labor Day weekend, much of the area received up to 10” of rainfall.
- Significant flooding observed in Charlotte and Glades County (Cecil Webb and Babcock Ranch areas)
  - This water will be moving south/southwest to the Caloosahatchee in the form of overland flow.
- Lee County Commission has continued the State of Local Emergency for the North Ft. Myers area that was put into effect on September 3rd.
- The County has been bringing in rock to fill holes and stabilize the roads for emergency vehicle access purposes and so that residents can get to and from their homes.

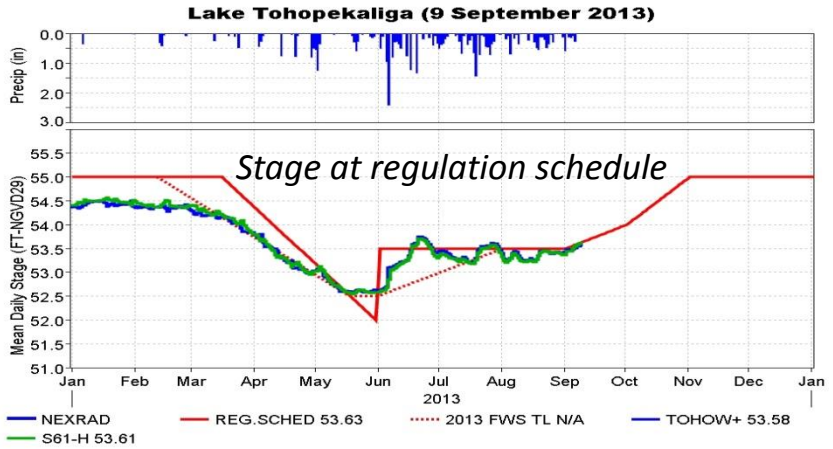
Lanny Drive – Lee County

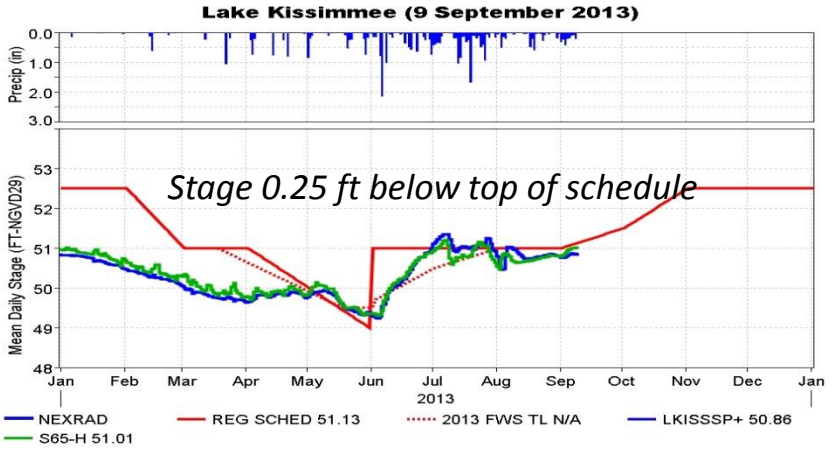
Baughman Rd. – Lee County

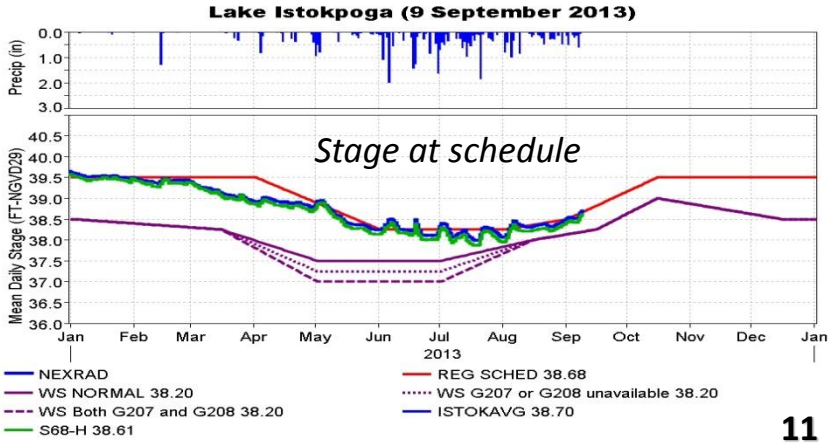

Nalle Rd. – Lee County
SEP 9 2013

KISSIMMEE BASIN


ORLANDO
S61
S63A
Arrows do not represent instantaneous flows, but overall operations for the last few days
S65
FT. PIERCE
S68
S65E
S84
S127
S72
S80
S308
S71
FisheatingCrk
C10A
S352
S78
S77
S79
S354
S2
S351
2004-05 SFWMD Aerial Photography
2006 Orange County Aerial Photography
2008 Hendry County Aerial Photography

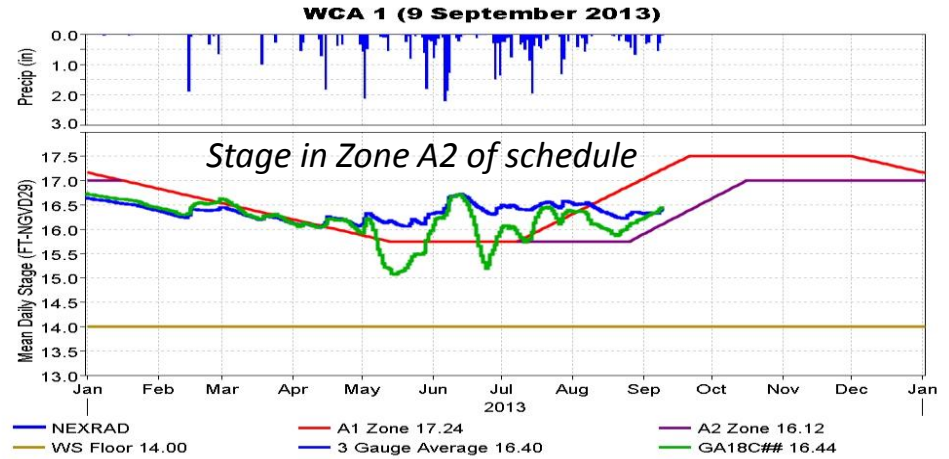

Lake Tohopekaliga (9 September 2013)
Precip (in)
Mean Daily Stage (FT-NGVD29)
Stage at regulation schedule
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2013
NEXRAD
REG.SCHED 53.63
2013 FWS TL N/A
TOHOW+ 53.58
S61-H 53.61

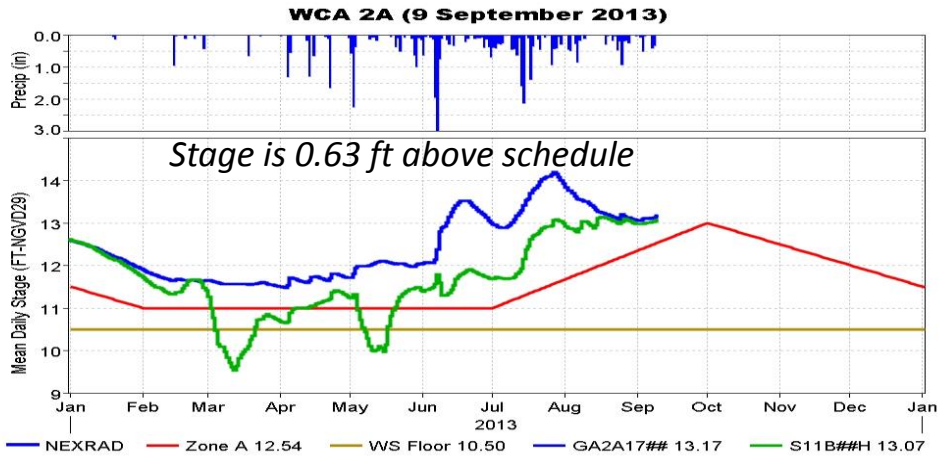

Lake Kissimmee (9 September 2013)
Precip (in)
Mean Daily Stage (FT-NGVD29)
Stage 0.25 ft below top of schedule
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2013
NEXRAD
REG SCHED 51.13
2013 FWS TL N/A
LKISSSP+ 50.86
S65-H 51.01

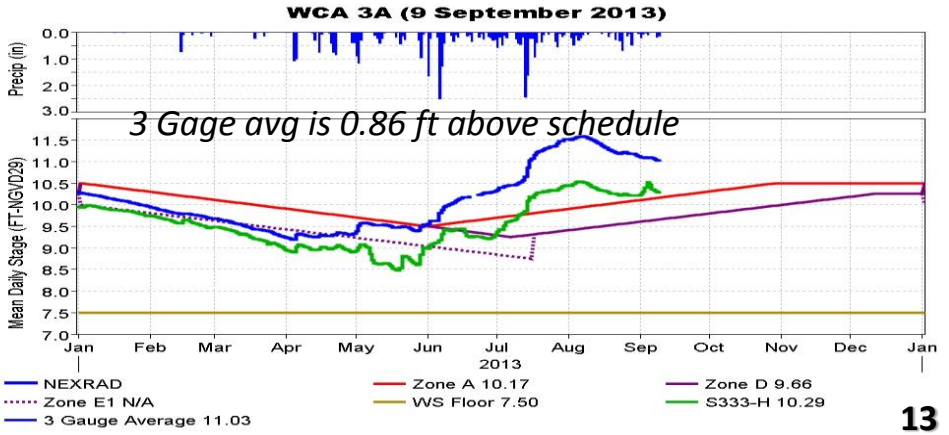

Lake Istokpoga (9 September 2013)
Precip (in)
Mean Daily Stage (FT-NGVD29)
Stage at schedule
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2013
NEXRAD
REG SCHED 38.68
WS NORMAL 38.20
WS G207 or G208 unavailable 38.20
WS Both G207 and G208 38.20
ISTOKAVG 38.70
S68-H 38.61

WATER CONSERVATION AREAS

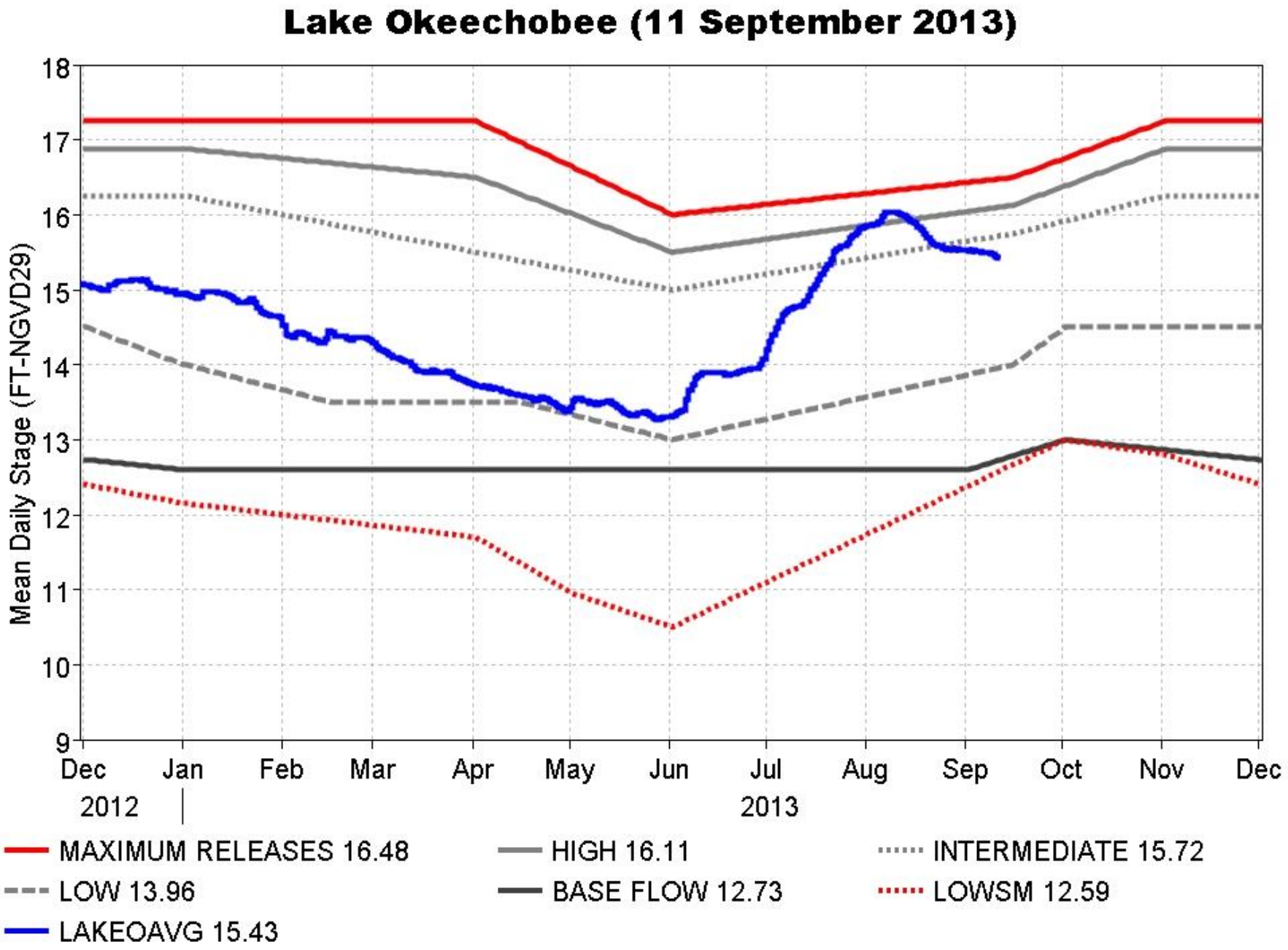

Arrows do not represent instantaneous flows, but overall operations for the last few days
S5AE
S5A
WCA-1 (LNWR)
S6
G94C
G372
G370
S-10D
S-10C
S-10A
S7
S39
S8
WCA-2A
S-11C
S-339
S-11B
S-11A
S38
s140
S-340
WCA-3A
S9
S13AW
S13
S-151
S31
S-337
S-344
S-343A
S-343B
S-12A
S-12B
S-12C
S-12D
S-333
S-335
S-334
ENP
S-331
Arrows are not to scale


WCA 1 (9 September 2013)
Precip (in)
Stage in Zone A2 of schedule
Mean Daily Stage (FT-NGVD29)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2013
NEXRAD
A1 Zone 17.24
A2 Zone 16.12
WS Floor 14.00
3 Gauge Average 16.40
GA18C## 16.44

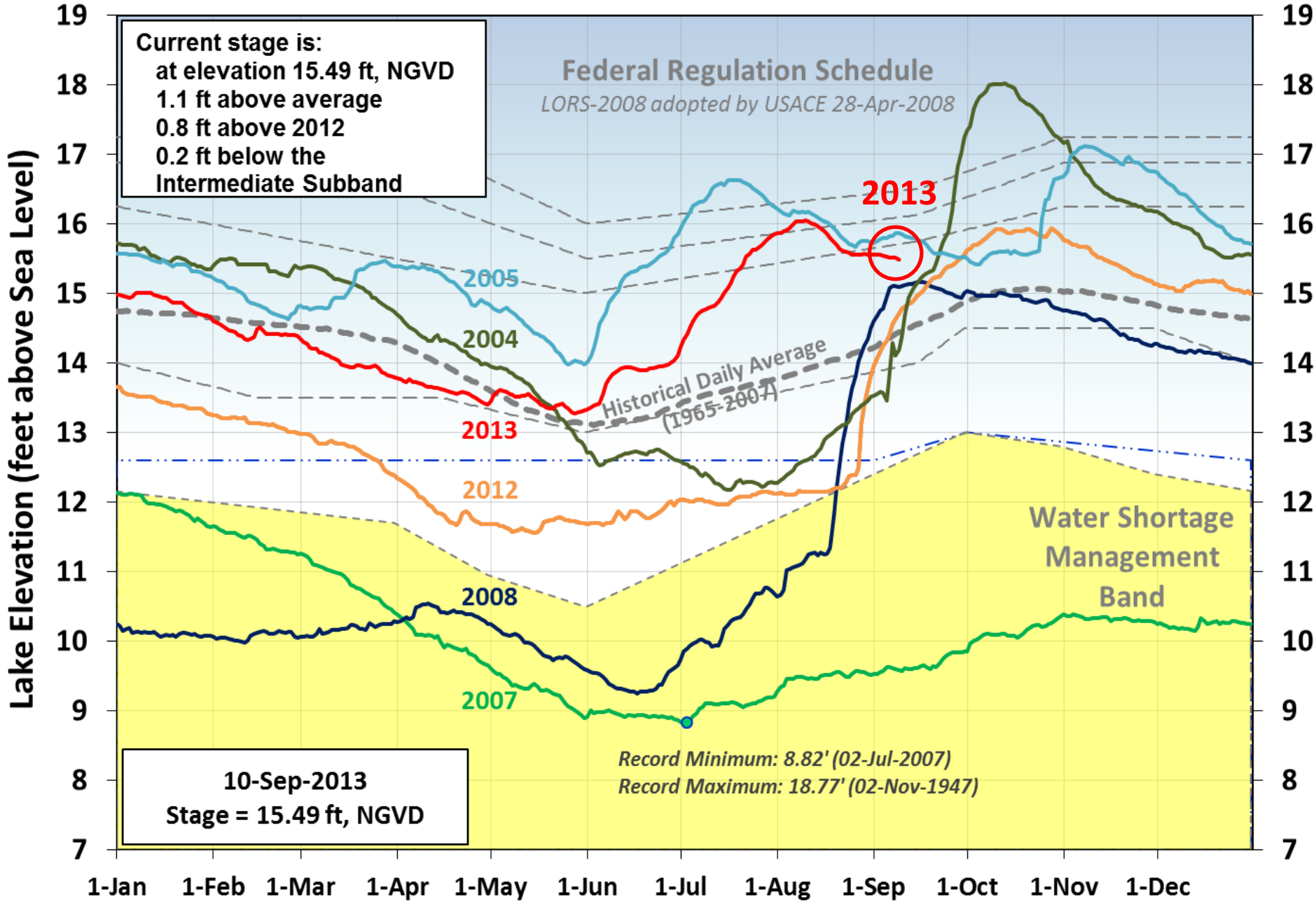

WCA 2A (9 September 2013)
Precip (in)
Stage is 0.63 ft above schedule
Mean Daily Stage (FT-NGVD29)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2013
NEXRAD
Zone A 12.54
WS Floor 10.50
GA2A17## 13.17
S11B##H 13.07


WCA 3A (9 September 2013)
Precip (in)
3 Gage avg is 0.86 ft above schedule
Mean Daily Stage (FT-NGVD29)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2013
NEXRAD
Zone A 10.17
Zone D 9.66
Zone E1 N/A
WS Floor 7.50
S333-H 10.29
3 Gauge Average 11.03

LAKE OKEECHOBEE


Lake Okeechobee (11 September 2013)
Mean Daily Stage (FT-NGVD29)
18
17
16
15
14
13
12
11
10
9
Dec
2012
Jan
Feb
Mar
Apr
May
Jun
Jul
2013
Aug
Sep
Oct
Nov
Dec
MAXIMUM RELEASES 16.48
HIGH 16.11
INTERMEDIATE 15.72
LOW 13.96
BASE FLOW 12.73
LOWSM 12.59
LAKEOAVG 15.43

Lake Okeechobee Water Level Comparison



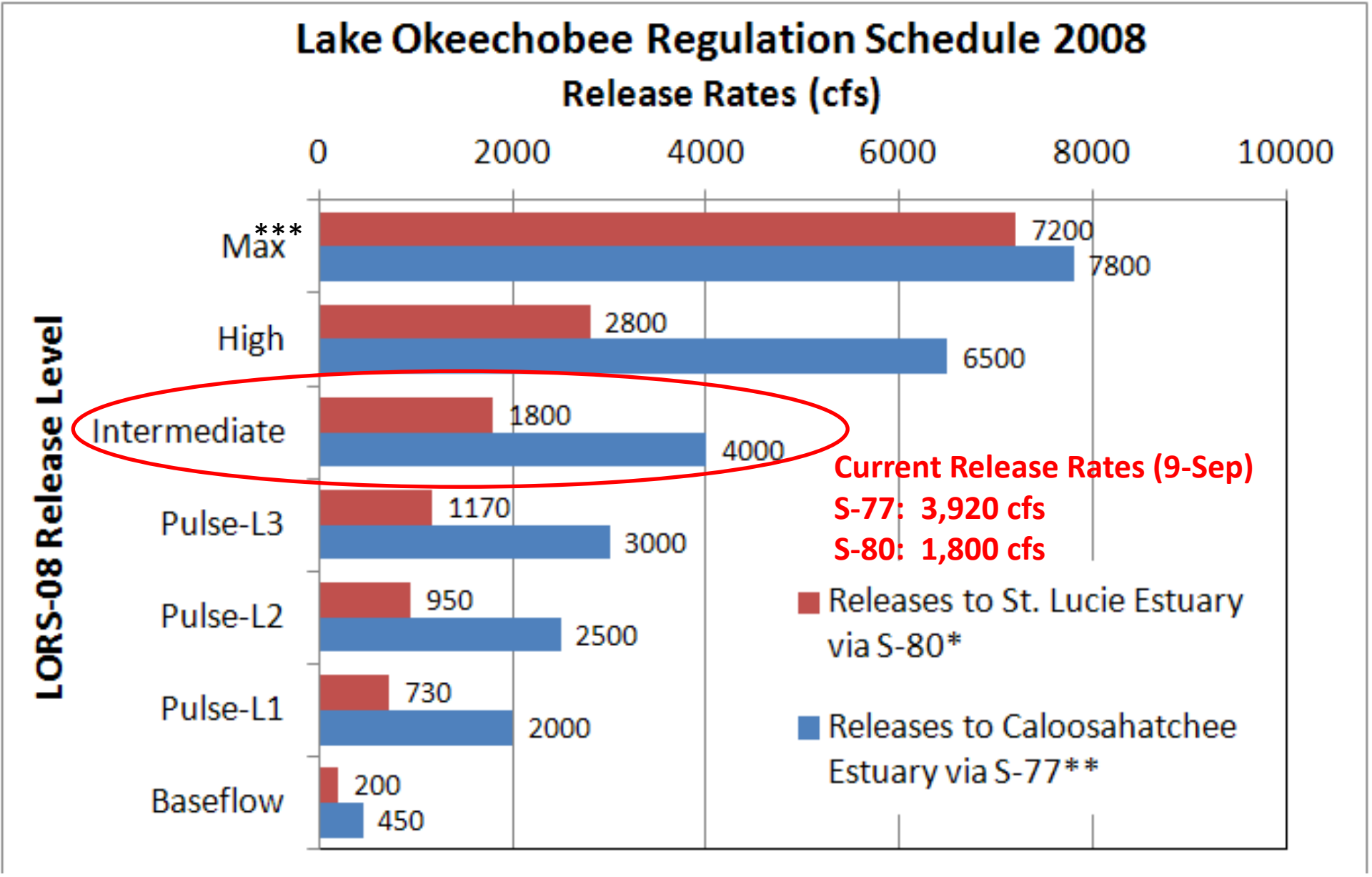
Lake Okeechobee: Current Operations

USACE's Lake O Regulation Schedule (2008 LORS)

- Stage (~15.5 feet, NGVD) within the upper third of the Low Subband
- Tributary Hydrologic Condition (THC) decreased from very wet to wet in late August
- Current week release guidance outcome:
  S-79: up to 3000 cfs
  S-80: up to 1170 cfs
  Up to maximum practicable to the WCAs if desirable or with minimum Everglades impacts

Recent History and Status

- 24-Aug-2013: USACE decreased discharge targets:
  S-77: from 6500 to 4000 cfs (3920 cfs on 9-Sep)
  S-80: from 2800 to 1800 cfs (1800 cfs on 9-Sep)
- 14-Aug-2013: WCA-1 stage receded below its regulation schedule and the SFWMD initiated Lake regulatory discharges through WCA-1 to tide
- No Lake regulatory discharges to WCA-2A or WCA-3A because stages exceed their respective regulation schedules



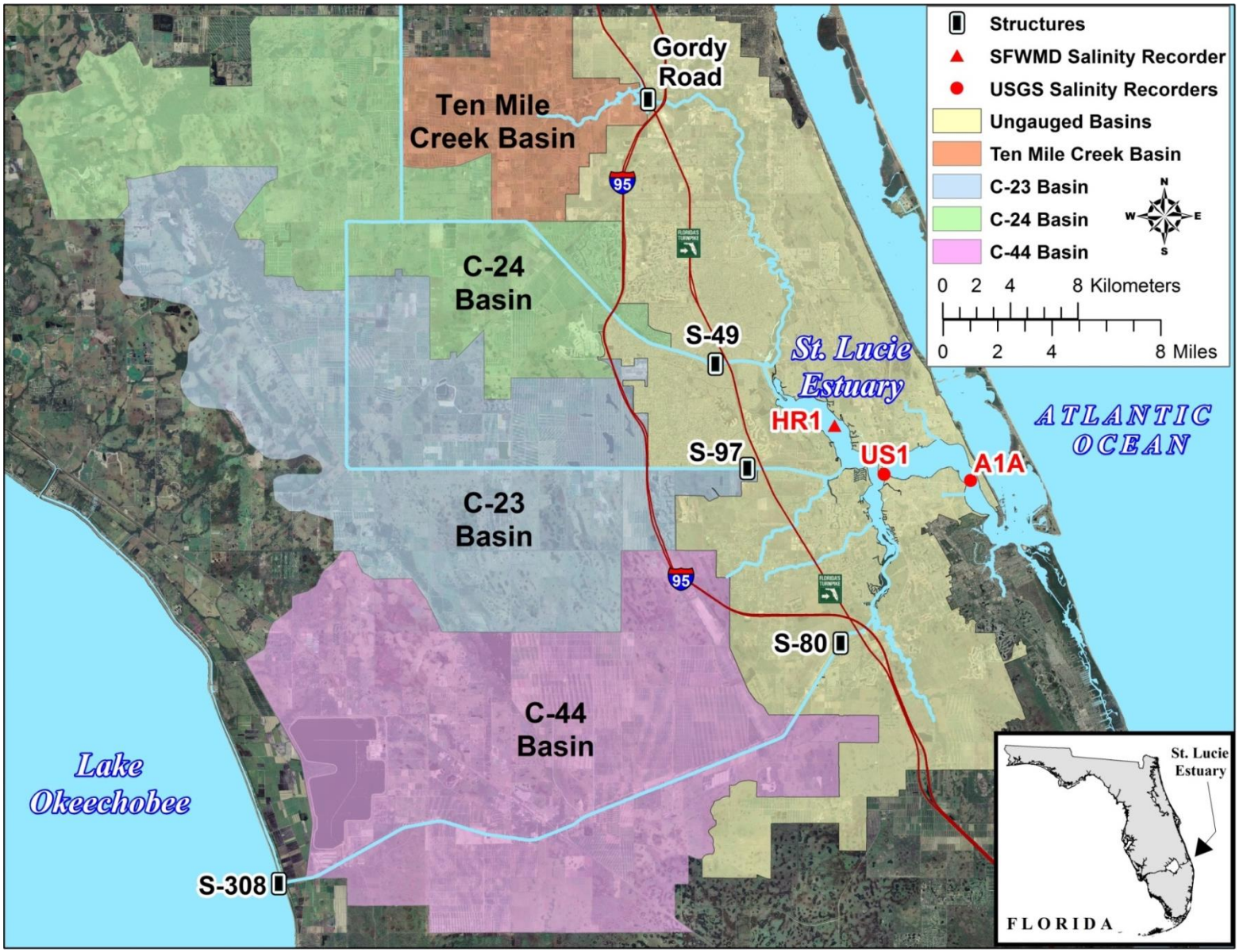
* Releases at S-308 are limited by C-44 basin runoff

** Baseflow Releases and Pulse Releases at S-77 are limited by C-43 basin runoff

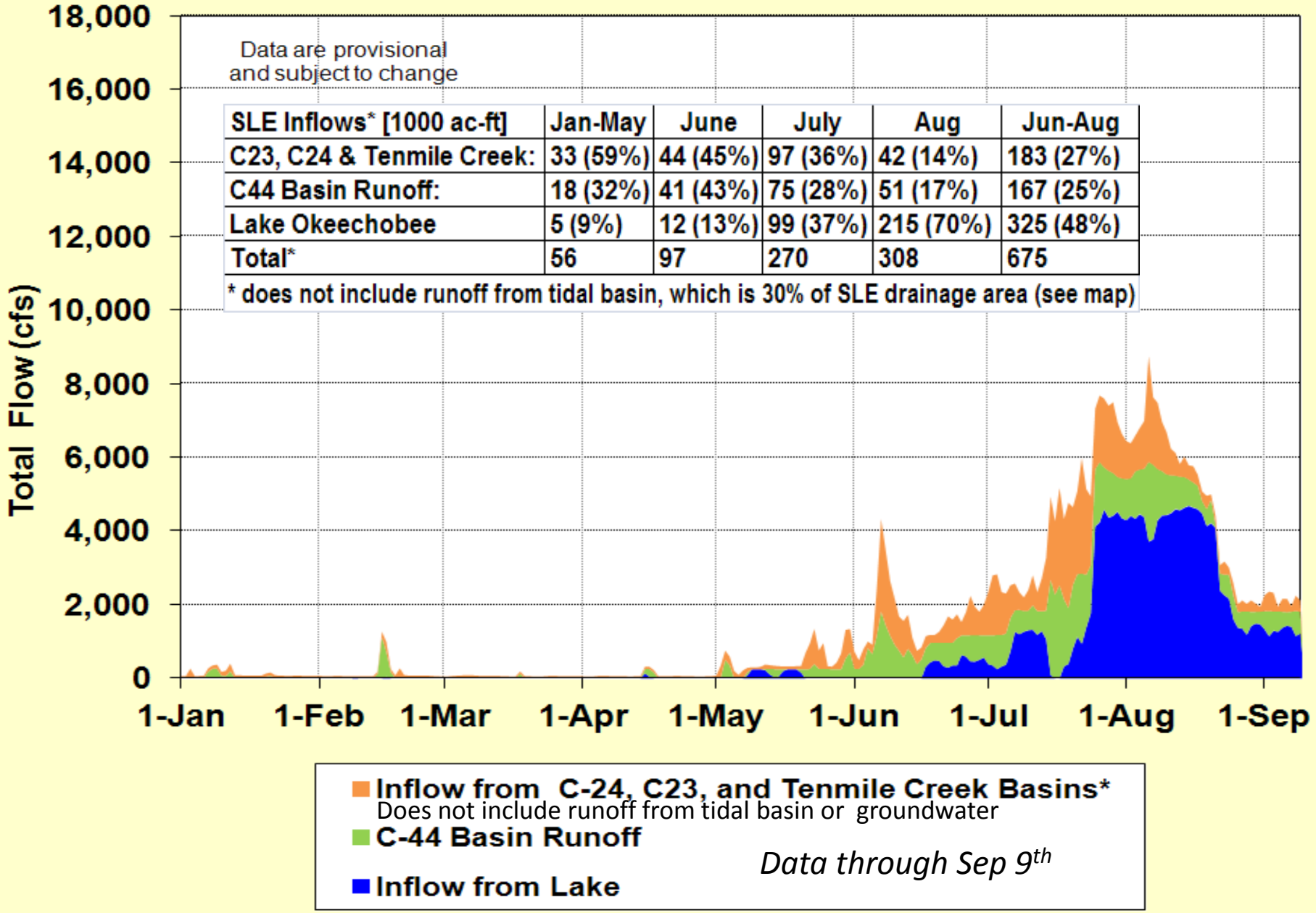
*** Maximum Release rates depend on Lake and canal stages

NORTHERN ESTUARIES

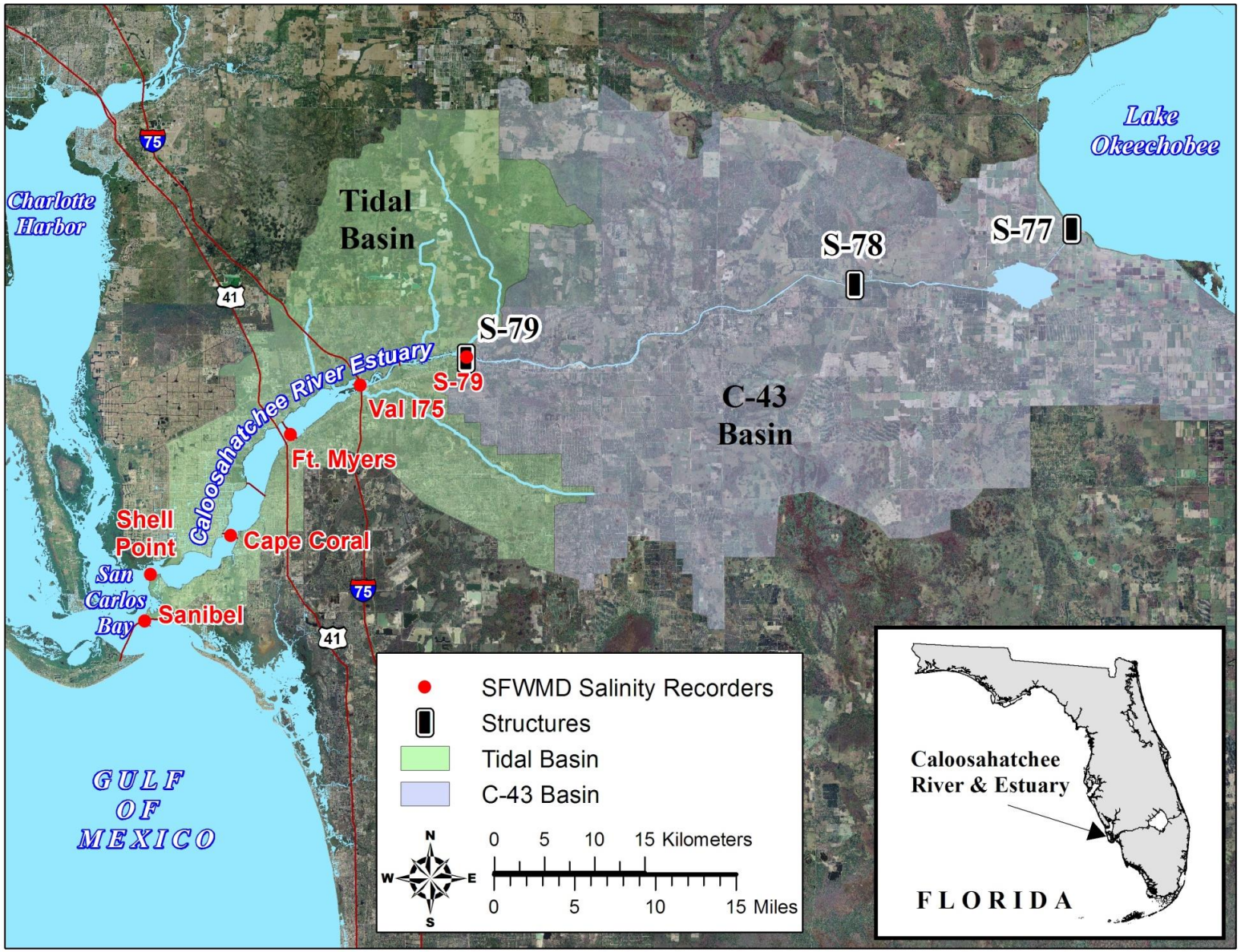
St. Lucie Estuary Drainage Basins



2013 Discharges to the St. Lucie Estuary

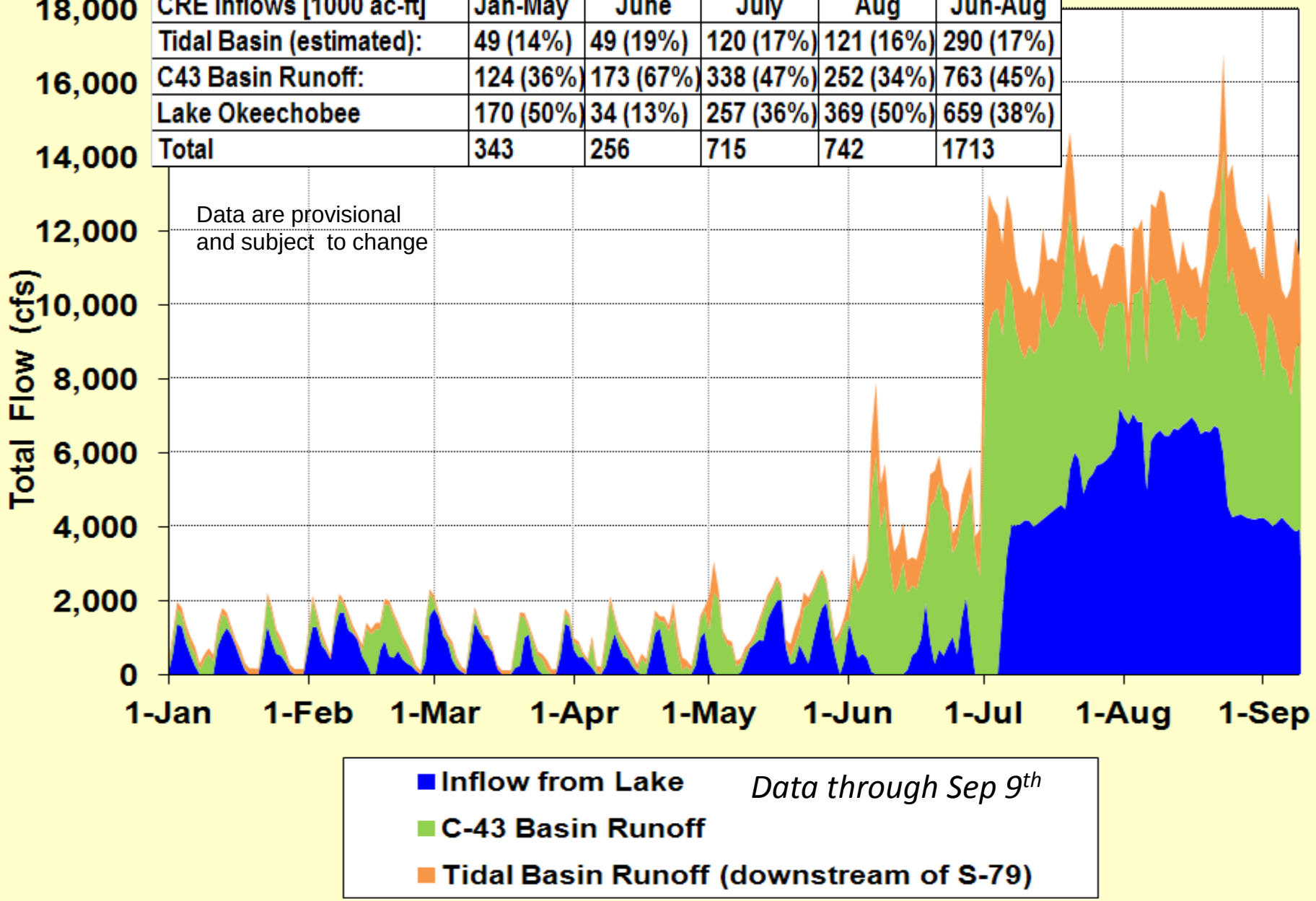


Caloosahatchee Estuary Drainage Basins



2013 Discharges to the Caloosahatchee Estuary

CRE Inflows [1000 ac-ft]	Jan-May	June	July	Aug	Jun-Aug
Tidal Basin (estimated):	49 (14%)	49 (19%)	120 (17%)	121 (16%)	290 (17%)
C43 Basin Runoff:	124 (36%)	173 (67%)	338 (47%)	252 (34%)	763 (45%)
Lake Okeechobee	170 (50%)	34 (13%)	257 (36%)	369 (50%)	659 (38%)
Total	343	256	715	742	1713

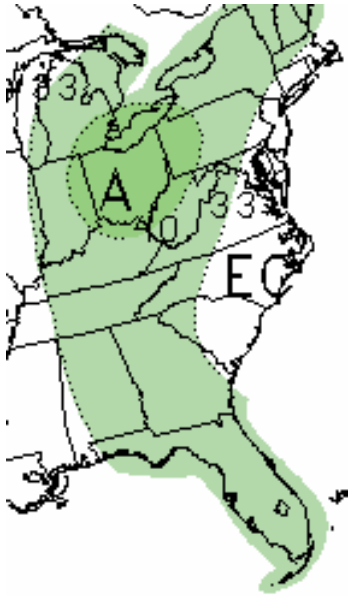


SEASONAL OUTLOOK

U. S. Seasonal Precipitation Outlook

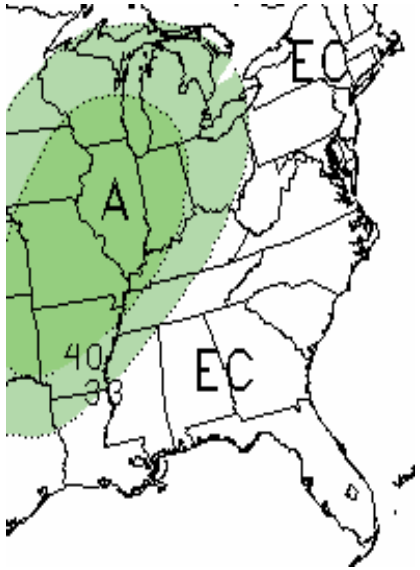
National Climate Prediction Center (CPC)

Sep 2013



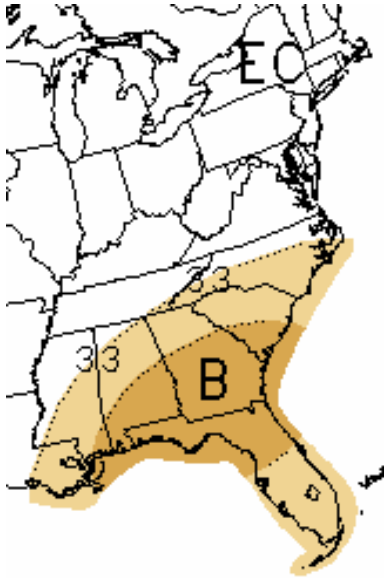
Made 31-Aug-2013

Sep-Nov 2013



Made 15-Aug-2013

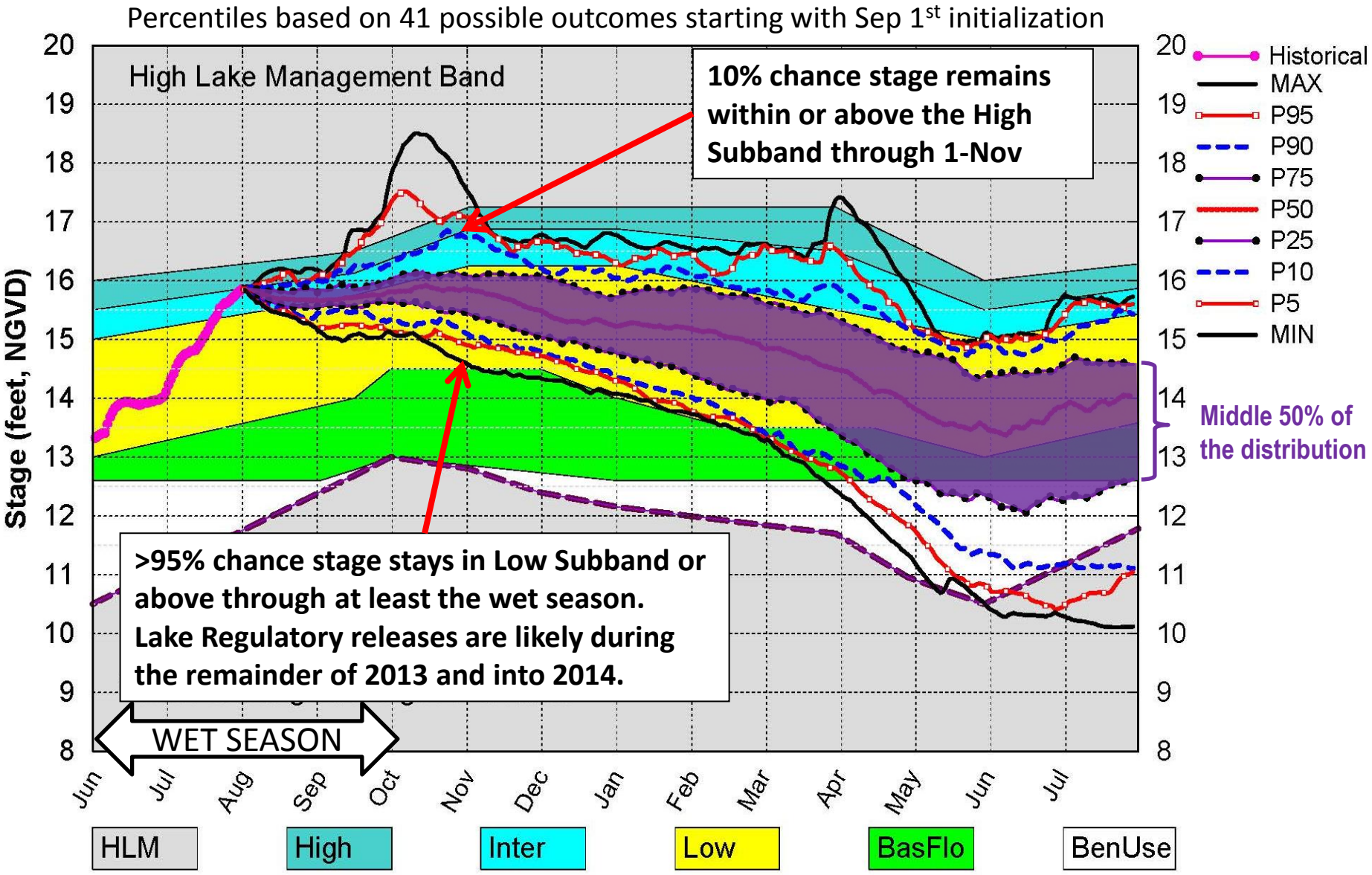
Nov 2013 - Jan 2014



Made 15-Aug-2013

The recent CPC precipitation outlooks for central & southern Florida indicate increased chances of Above-Normal rainfall for September 2013, Equal Chances (EC) of Above-Normal (A), Normal, and Below-Normal (B) for the reminder of the wet season and increased chances of Below Normal for the first half of the 2013-2014 dry season.

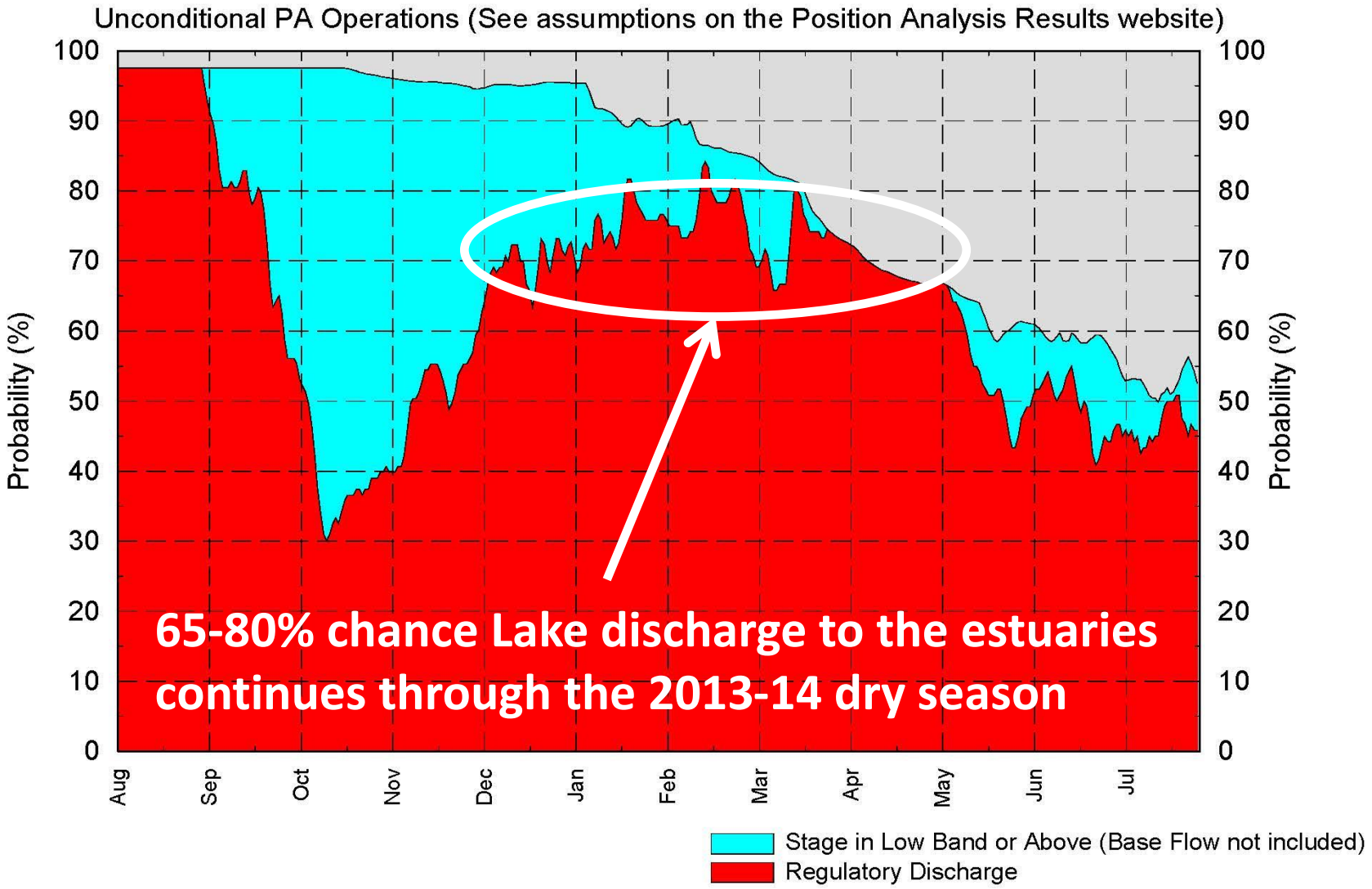
Lake Okeechobee SFWMM August 2013 Position Analysis



(See assumptions on the Position Analysis Results website)

Mon Aug 5 18:46:49 2013

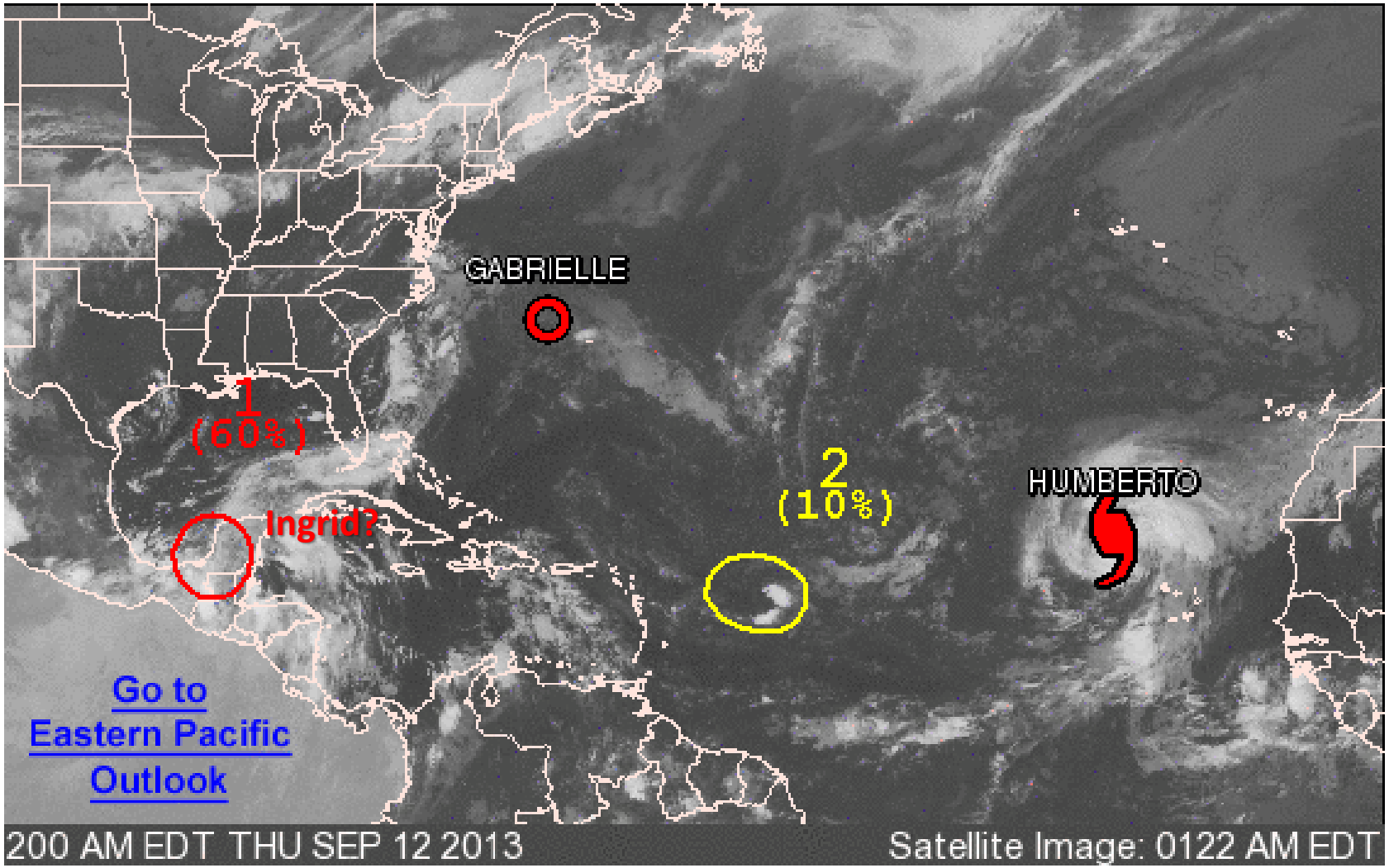
Lake Okeechobee – LORS2008 Releases to the Estuaries



Tue Aug 06 16:57:39 EDT 2013

Graphical Tropical Weather Outlook

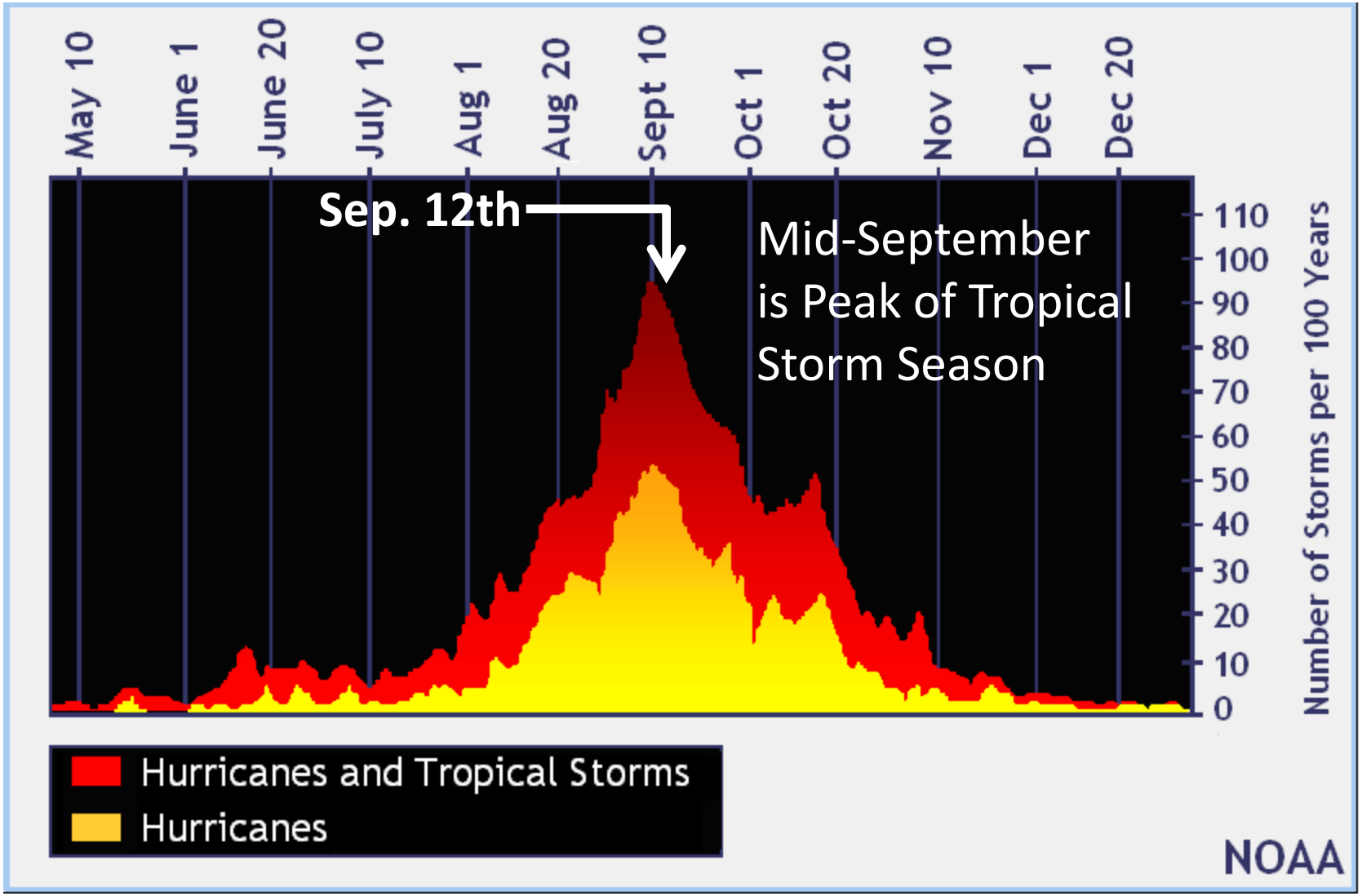
National Hurricane Center Miami, Florida



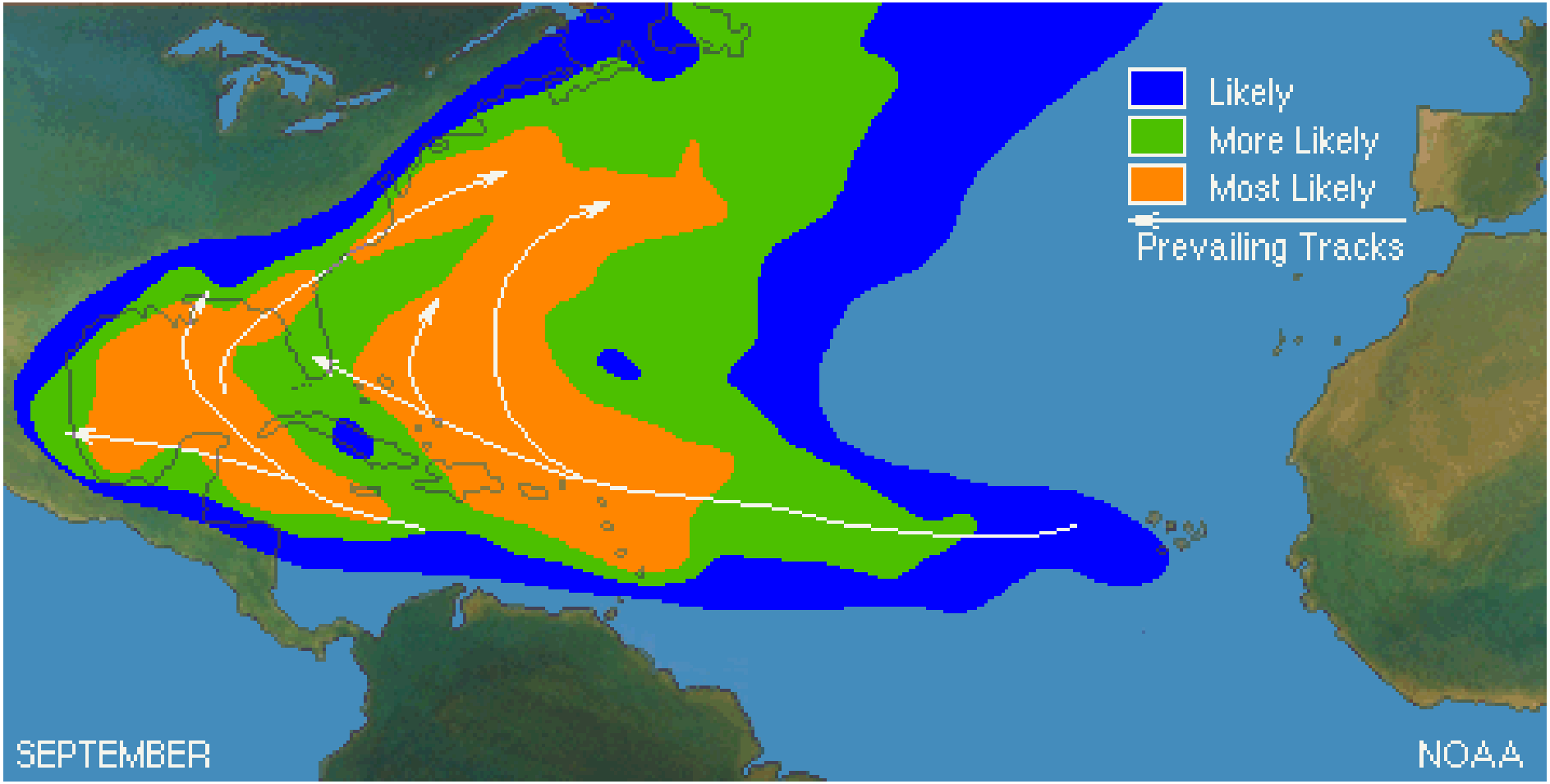
Outlined areas denote current position of systems discussed in the Tropical Weather Outlook. Color indicates probability of tropical cyclone formation within 48 hours.

Low <30% Medium 30-50% High >50%

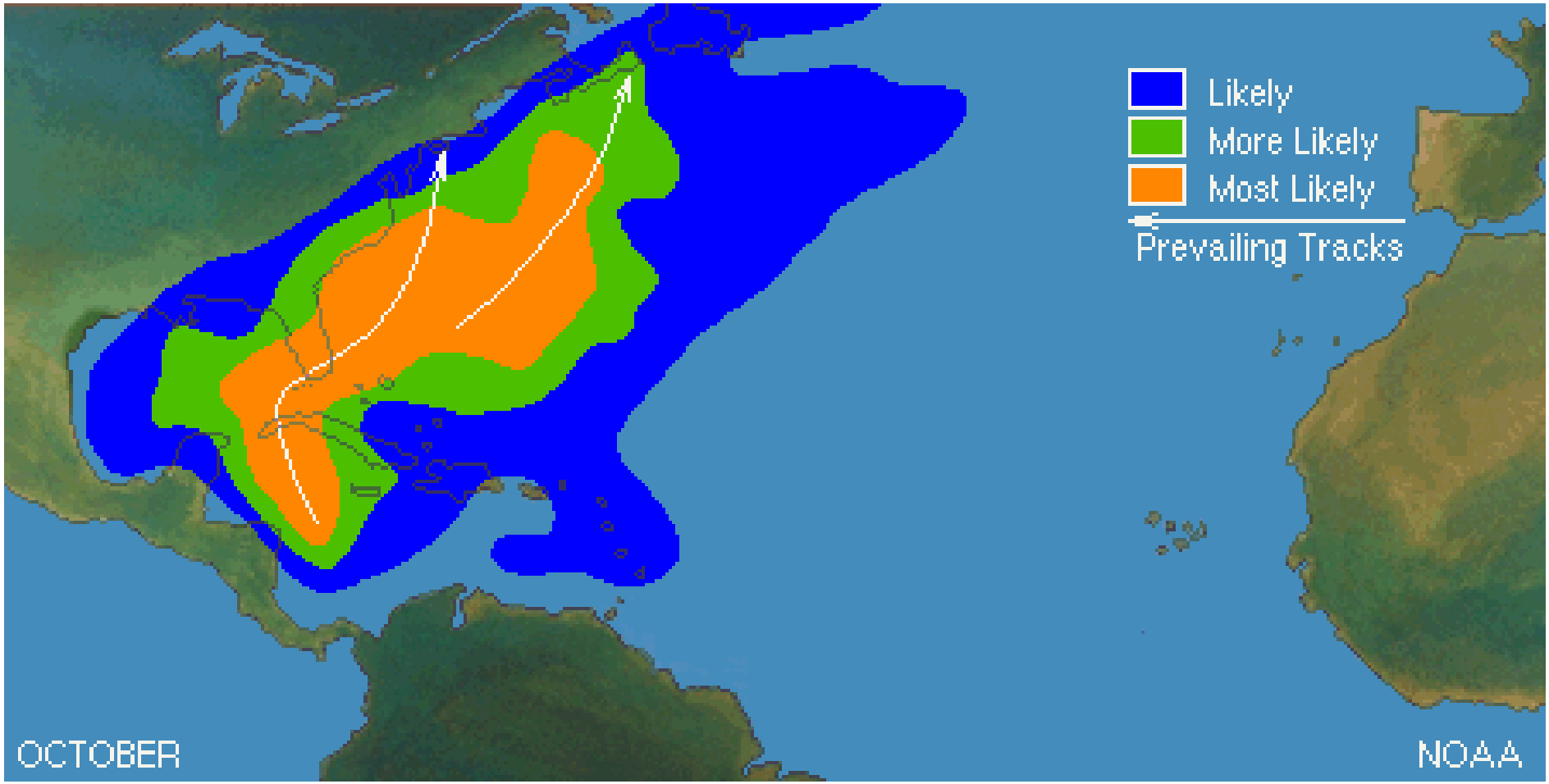
Atlantic Tropical Storm & Hurricane Season
1-June to 30-November



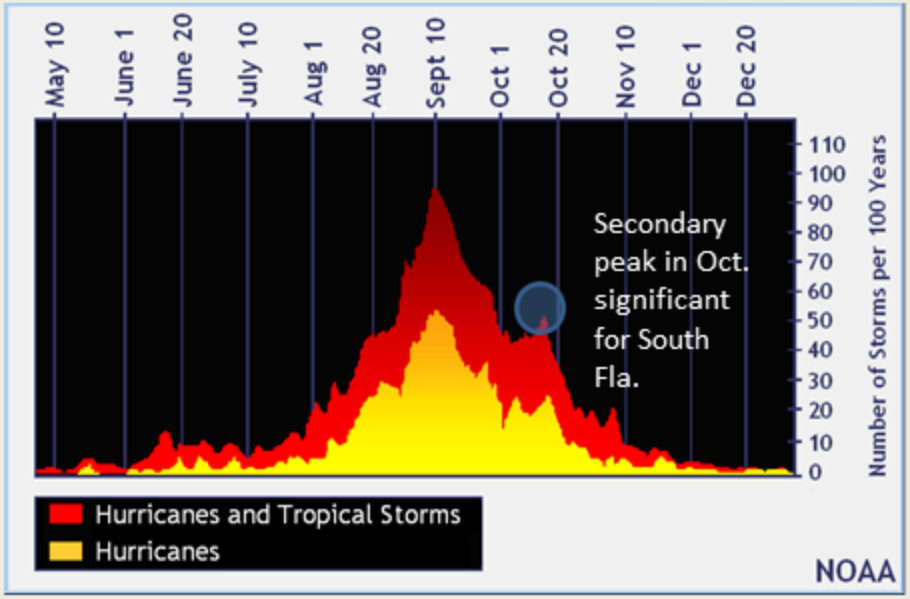
Typical Areas of Tropical Origin
September



Typical Areas of Tropical Origin
October

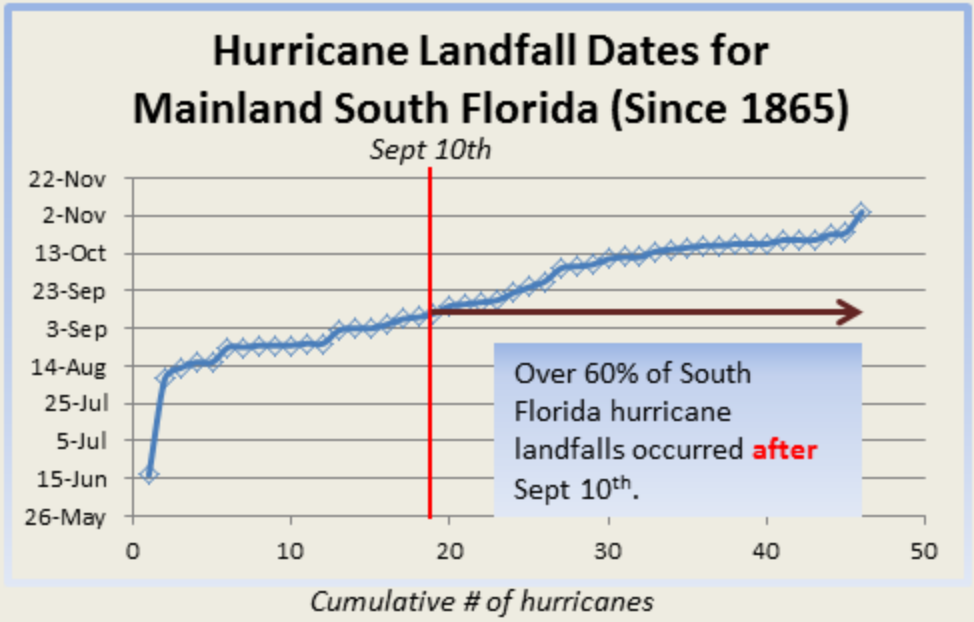


September 10th is Peak of Atlantic Hurricane Season…But What About South Florida?



As the graph below shows, most of mainland South Florida's landfalls have occurred AFTER the basin-wide peak. This is largely due to the high number of storms that have affected our area in October.

While September 10th is statistically the peak of hurricane season (based on total number of storms per 100 years) over the entire Atlantic basin, this date bears little significance for mainland south Florida.



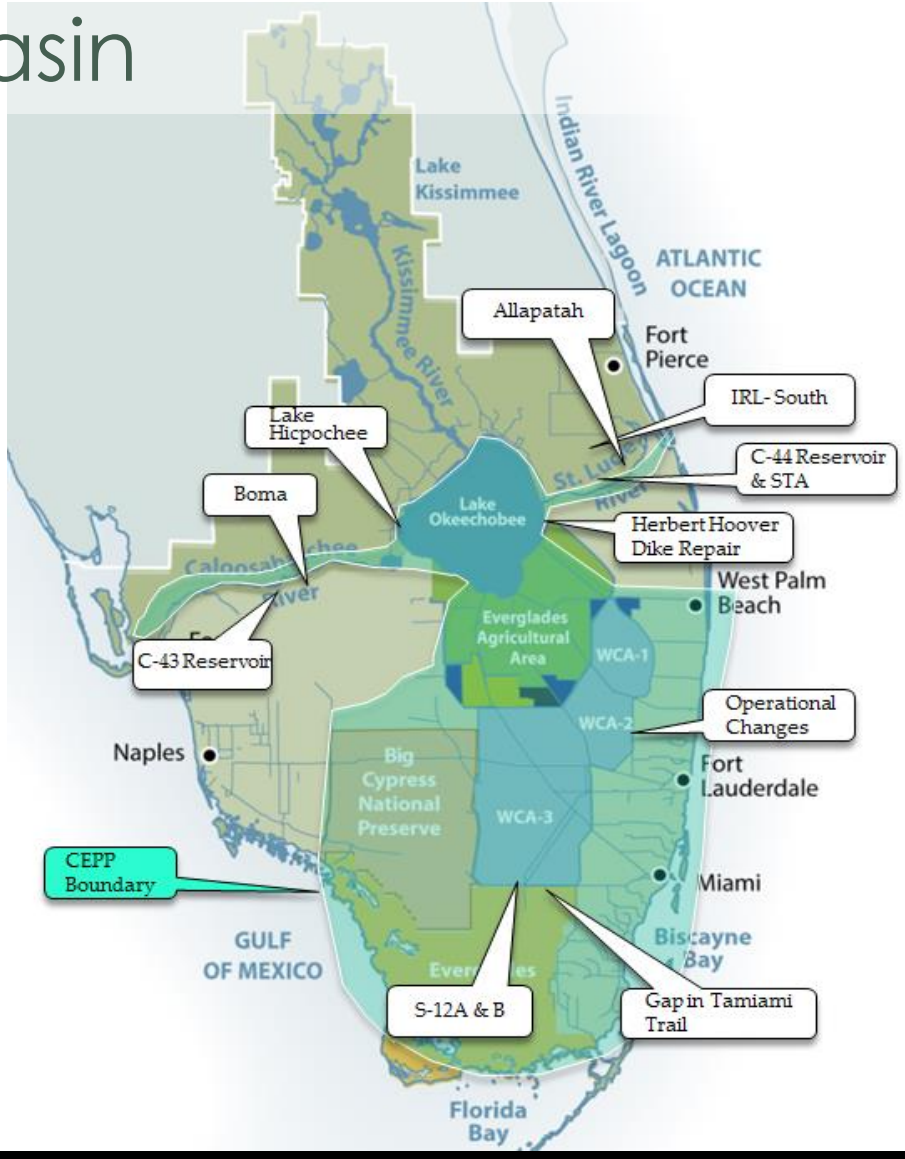
ONGOING ACTIVITIES

Immediate Actions

- Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin, held a public hearing in Stuart on August 22nd.
  - Senator Joe Negron (Stuart), Chair
  - Senator Lizbeth Benacquisto (Ft. Myers), Senate Majority Leader
- The Committee heard from local elected officials, scientific experts and numerous constituents who offered innovative water storage solutions to help reduce and redirect the current releases from Lake Okeechobee

Recommendations to the Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin

- Send more water south
  - Alternate operational approaches & pathways
- Public land storage
- Cut a new gap in Tamiami Trail
- Vegetation removal at S-12A & B

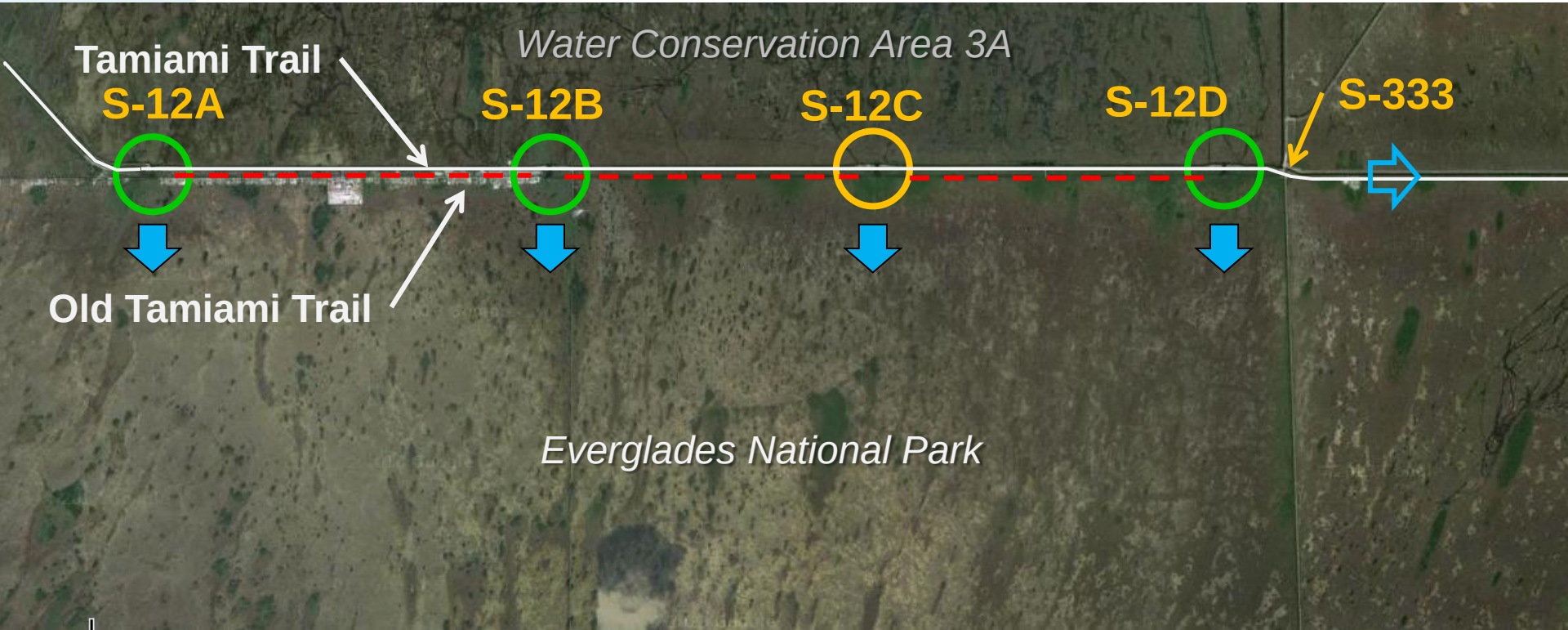


Maximizing WCA-3A Regulatory Discharge to tide through South Dade Conveyance System

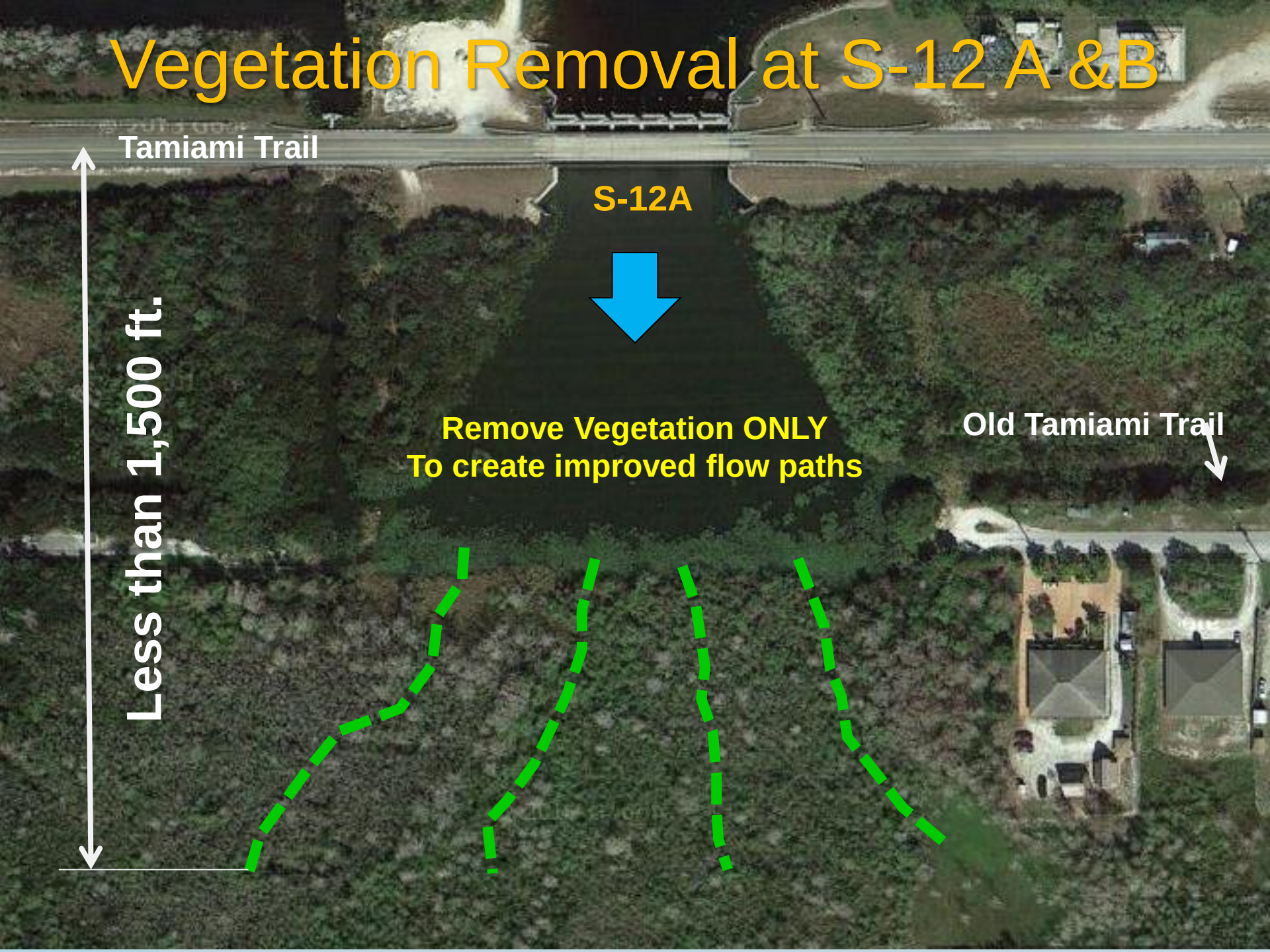
- USACE issued an Environmental Assessment (EA) for a proposed temporary deviation on August 23rd
- SFWMD presentation at South Dade Agricultural Practices Advisory Board on Sept 4th
- District provided a response to USACE EA on Sept 5th
- SFWMD coordination with multiple stakeholders
- Final SFWMD Recommended Plan Sept 12th
- If USACE accepts comments, revised EA to be reissued for 30 days public comment
- Anticipated approval Late October

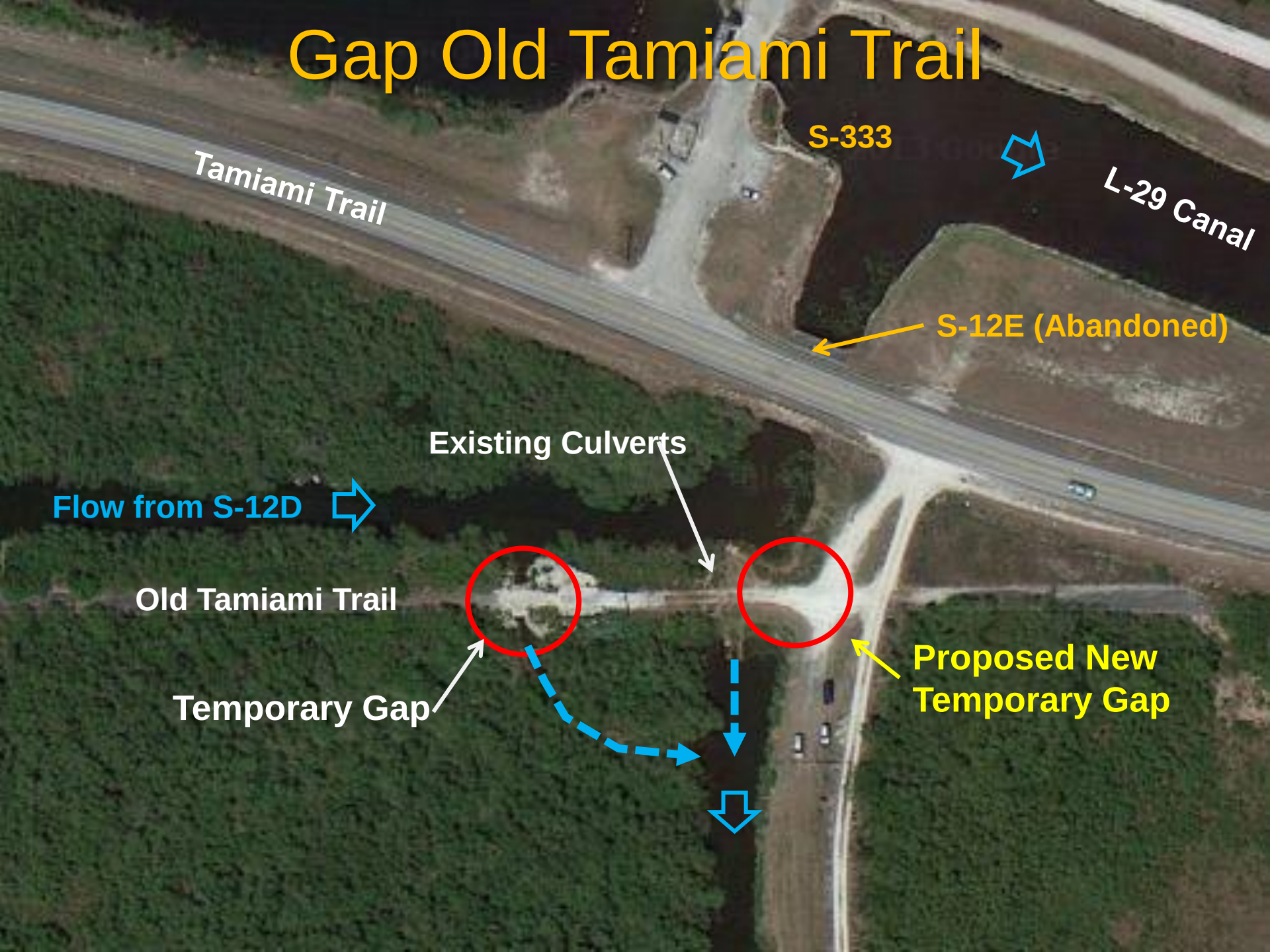
Maximizing WCA-3A Regulatory Discharge to Everglades National Park via the S-12s

- Physical limitations to discharge via S-12s
  - Downstream Vegetation
  - Old Tamiami Trail



Vegetation Removal at S-12 A &B




Gap Old Tamiami Trail
S-333
Tamiami Trail
L-29 Canal
S-12E (Abandoned)
Existing Culverts
Flow from S-12D
Old Tamiami Trail
Temporary Gap
Proposed New
Temporary Gap


HPSI
150L
09/03/2013


CAT
330C L
CAT
CAT
150


09/06/2013


CAT
DEERE
544H
09/07/2


09/07/2013


QUESTIONS?
09/07/20